REMARKS/ARGUMENTS

These remarks are submitted in response to the Office Action of December 15, 2005 (Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due.

In paragraph 1 of the Office Action, Claims 1-24 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Publication No. US2002/0076008A1 to Neary (hereinafter Neary).

I. Applicants' Invention

It may be helpful to reiterate certain aspects of Applicants' invention prior to addressing the references cited in the Office Action. The invention, according to one embodiment provides a method of verifying programmatic actions during an execution of a voice response system. The method includes establishing a voice link between a test system and a voice response system, sending a signal to the test system over the voice link to indicate that a voice prompt is to follow, sending the voice prompt to the test system over the voice link, determining a voice prompt to send with instructions for testing the voice prompt, sending a voice command from the test system to the voice response system based on the voice prompt, and testing the voice response system with the voice command in accordance with the instructions for evaluating a programmatic action in response to the voice command. Notably, the voice prompt sent to the test system includes execution instructions for testing the voice response system. The testing includes responsively initiating a programmatic action based upon the execution instructions contained within the voice prompt. The voice command, the voice prompt, and the programmatic action can be logged for later validating the execution of the voice response system. The validation can include comparing the programmatic action with an expected programmatic action based on the voice prompt.

In one arrangement, the test system receives the voice prompt and sends a portion the voice prompt back to the voice response system as a voice command. For example, the voice command is an audio signal extracted from a portion of audio in the voice prompt sent by the voice response system to the test system.

II. The Claims Define Over the Prior Art

As already noted, Claims 1-24 were rejected as being anticipated by Neary. Neary is directed to automated verification of utterance content and call-flow performance through an interactive audio system. For call flow verification purposes, appropriate utterances are provided to simulate a typical customer inquiry. To enable verification processing, the interactive audio system incorporates the capability of providing coded signals representative of content of each utterance in coded format for inclusion in prompt signals. The coded signals are used solely to identify the utterance.

Neary discloses an interactive voice response (IVR) system that provides voice prompts to provide call-flow verification to validate system accuracy, particularly under high-volume or saturation calling conditions. The IVR system has a call-flow verification (CFV) mode which can be activated for validating system accuracy. In the CFV mode, the IVR system provides prompt signals which include coded signals representing the content of utterances. An automated call generator (ACG) unit places simulated user calls to the IVR system. The content of utterances is represented by coded signals included in prompt signals sent by the IVR system during the course of the simulated call and stored by the ACG unit. By comparing content of received utterances represented by such coded signals with previously stored data representative of correct utterances, discrepancies are identified for call-flow verification. DTMF signals can be used to represent characters of an utterance in a coded format.

Referring to FIG. 3, Neary includes an encoder 30 and an activation module 32 within the interactive voice response system 10 (IVR). The encoder 30 encapsulates voice prompts generated by the IVR into a coded format that can be read by a decoder 34 residing in an automatic call generator 16 (ACG). In particular, the coded format includes pre-appending and appending DTMF sequences corresponding to the utterance or identifying the utterance. The utterance may or may not be included in the coded signal. The decoder 34 can interpret the voice prompts from the coded signals and respond to the IVR accordingly. For example, the voice prompt can present one of a spoken list of options to choose from. The IVR can be pre-programmed to associate the list of options with coded signals (Neary, Pg. 2, paragraph [0019]). Accordingly, the encoder 30 can identify the voice prompt and encode it in a format readable by the decoder 34. Upon receipt of the coded signal, the decoder 34 can determine the voice prompts and respond via DTMF sequences.

For example, FIG. 7A of Neary illustrates the sending of encoded prompt signals from the ACG to the IVR. The coding format identifies how the coded utterance will be interpreted by the decoder 34. Understandably, the encoder 30 and the decoder 34 operate in a complementary manner for interpreting the content of the coded signal; that is, the spoken utterance. The coding associated with the coded signals may be considered instructive for purposes of extracting content from the coded signal. However, the instructions only describe how to identify the encoded utterance, and the instructions do not suggest how the content should be employed for testing. It is apparent in Neary that the ACG 16 performs the encoding process which includes DTMF signaling only for call-flow verification (Neary, Pg. 2, paragraph [0022]).

In contrast, Applicants' invention includes execution instructions within a voice prompt for providing instructions to a test system for testing an IVR (See Specification, Pg. 11, paragraph [0029]). The instructions describe how the ACG is to test the IVR with the voice prompts for verifying execution of programmatic actions on the IVR during

processing of the voice prompt. In addition, signals preceding the voice prompts indicate to the test system which information is relevant for testing (See Specification, Pg. 9, paragraph [0020]). Applicants are directed to identifying programmatic actions associated with processing a voice command or utterance that cause errors. Accordingly, a test program is contained within the IVR to gather programmatic action information and store the information within a data store. Upon initiation of programmatic actions, the VRS can store the execution information, and send the execution information back with voice prompts to the testing system (See Specification, Pg. 10, paragraph [0025]). Processing errors can be confirmed by identifying the programmatic actions associated with processing the received voice commands.

Programmatic actions are validated on an IVR, not on an ACG. This is a point of difference between Applicant's invention and Neary. Whereas, Neary includes performing validation of call-flow on the ACG, Applicants perform validation of programmatic actions on the IVR. Accordingly, the programmatic actions will occur at the IVR and not the ACG. Programmatic actions are associated with the software programs executing on the IVR. Thus, the testing is conducted on the IVR to identify the programmatic actions associated with processing the voice command. Programmatic actions can include identifying the sequence of method calls invoked, the software modules used during processing of the voice command, and the prompt hierarchy accessed during processing. In one aspect of the Application, the instructions inform the testing unit how to proceed through the hierarchy of the IVR.

Neary is clearly directed to call-flow verification and not to the verification of execution, which includes identifying programmatic actions during processing. Call-flow verification determines whether a response is an expected response in view of an inquiry. The response is examined and compared to a list of expected responses that are known to occur given information related to the inquiry. A call-flow error occurs when an IVR responds with an unexpected response. Understandably, Neary codes voice prompts for

identifying the content of the voice prompt in order to compare the response from the IVR. Neary can identify call-flow errors when a response does not match an expected response. For example, by comparing content of an utterance label as represented by coded signals included in a prompt signal with content of a correct utterance label (i.e., accurately responsive to a particular simulated user input) as represented by previously stored data, discrepancies can be identified. Discrepancies may include an inaccurate utterance, a missing utterance, an out of order utterance, or other such discrepancies. Absent any discrepancy, accuracy of call-flow may be confirmed (Neary Pg. 4, [paragraph 0037]).

In contrast, Applicants' invention is directed to capturing programmatic actions on the IVR associated with processing a voice command for identifying correct programmatic actions. The programmatic actions reveal why a response is provided and indicative as to how the response was formulated. For example, an IVR first evaluates a voice command prior to responding with a voice prompt. The evaluation process consists of programmatic actions for determining the correct voice prompt reply. Programmatic actions are not available by examining the voice prompt response alone. Accordingly, Applicant's include a database directly connected to the IVR for capturing programmatic actions occurring on the IVR. In contrast, Neary employs a database on the ACG, which clearly indicates Neary is concerned with capturing only voice responses for call-flow validation.

Applicants respectfully assert, that Neary fails to expressly or inherently teach every feature of Applicants invention. For example, Neary fails to teach including instructive information within a voice prompt for testing an IVR. Neary fails to teach capturing programmatic actions as amended in each of the independent claims.

In addition, Neary further fails to teach receiving an audio voice prompt from an IVR and sending back a portion of the audio in a voice command for testing the IVR as recited in Claims 4 and 5 (See Specification Pg. 4, paragraph [0008], Pg. 7, paragraph

[0015]). On Page 4 of the Office Action, the Examiner points out that Neary teaches a simulated response "1"; (Enter "1" in Figure 7A, paragraph [00168-10]) from the ACG unit wherein the voice command is based on a voice prompt sent by the IVR system. However, the Enter "1" command in Figure 7A of Neary is a tone sequence initiated by depressing the "1" number on the phone. It is not an audio representation such as the "one" in the "Press one for data", else the response would be "one" and not "1". Neary clearly identifies the response as a touchtone signal for the number "1" (Neary Pg. 3, paragraph [0034]). Accordingly, Neary does not teach sending back a portion of the audio received in a voice prompt in a voice command.

In addition, Neary fails to teach comparing a text of an audio portion of the voice command with a text of an audio portion of the voice prompt by converting audio to text using a speech recognition system as amended in Claim 5. Neary does not disclose a speech recognition system for converting audio to text for comparative purposes. Applicant clearly teaches using a speech recognition system (See Specification, Pg. 12, paragraph [0026]) and a text-to-speech system (See Specification, Pg. 10, paragraph [0026]).

CONCLUSION

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the

Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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